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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/730,666	12/08/2003	Chiyoko Sato	09792909-5745	4843

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EXAMINER	
CANNING, ANTHONY J	
ART UNIT	PAPER NUMBER
2879	

DATE MAILED: 01/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

ST

Office Action Summary	Application No.	Applicant(s)	
	10/730,666	SATO ET AL.	
	Examiner	Art Unit	
	Anthony J. Canning	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 October 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) *8-10* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/14/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Acknowledgement of Amendment

1. The amendment to the instant application was entered on 29 October 2005.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 2, and 6 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamazaki (U.S. 2002/0030440 A1).

4. As to claim 1, Yamazaki discloses a display apparatus including: a plurality of lower electrodes patterned on a substrate (see Fig. 8B, items 700 and 711; paragraphs 0123 and 0124) on the basis of each pixel (see Fig. 8B, item 711; paragraph 0124); an auxiliary wiring disposed between adjacent lower electrodes at the same level as the lower electrodes (see Fig. 6D, items 527 and 528; paragraph 102; see Fig. 8B, items 709-711; the drain wirings in items 709, will be with each pixel electrode and therefore between adjacent lower pixel electrodes; see Fig. 8B, item 715; paragraph 124; a portion of the wiring is on insulating layer 613, see Fig. 7, paragraph 115, the pixel electrode, 711 is also formed on the same layer; both the drain wirings and the item 715 are auxiliary wires) and insulated from the lower electrodes (see Fig. 7, items 608 and

613; paragraph); an insulating film formed on the substrate (see Fig. 7, items 608 and 613), the insulating film having pixel openings for exposing central portions of the lower electrodes (see Fig. 8B, the insulating films 608 and 613, not labeled, stops where the pixel electrode, 711, is formed) and connection holes reaching the auxiliary wiring (see Fig. 6D, paragraph 101); an organic layer patterned in the state of covering bottom portions of the pixel openings (see Fig. 8B, item 713; paragraphs 0118 and 0124; paragraph 0118 says there are no limitations put on what material the EL layer so long as it's low molecular or a polymer, and can therefore be an organic polymer); and an upper electrode covering the organic layer and connected to the auxiliary wiring through the connection holes (see Fig. 8B, item 714; paragraph 0124; see region where item 714 travels through the insulation layer (613 not shown) and connects with wiring 715, the left hand side of the figure).

5. As to claim 2, Yamazaki discloses a display apparatus as set forth in claim 1. Yamazaki further discloses that the substrate includes an inter-layer insulating film covering a thin film transistor substrate provided with thin film transistors for driving the pixels (see Fig. 7, items 608, 620, 621, 622, and 623; paragraphs 0112-0114), and each of the lower electrodes is connected to each of the thin film transistors through a connection hole formed in the inter-layer insulating film (see Fig. 7, items 606 and 609; paragraph 0114).

6. As to claim 6, Yamazaki discloses a display apparatus as set forth in claim 1, wherein the upper electrode is light-transmitting (see Fig. 7, item 612; paragraph 0116; indium tin oxide is a transparent material commonly used for electrodes in display devices).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki (U.S. 2002/0030440 A1) in view of Sakaguchi et al. (U.S. 6,366,016 B1) and in further view of Shibata et al. (U.S. 6,147,451).

9. As to claim 3, Yamazaki discloses a display apparatus as set forth in claim 2. Yamazaki further discloses that the organic layer is patterned in the state of covering the bottom portions of the pixel openings (see Fig. 8B). Yamazaki fails to disclose having end portions partly overlapping themselves, and the upper electrode covers the organic layer and is connected to the auxiliary wiring through the connection holes between portions of the organic layer.

Sakaguchi et al. disclose an organic electroluminescent display wherein the end portions of the organic layer each other (see Fig. 8a, items 4 and 26; column 5, lines 31-33). Sakaguchi et

al. further disclose that this keeps the end portions of the organic electroluminescent layer in each pixel from being exposed (column 5, lines 25-8).

Shibata et al. disclose that the upper electrode layer is connected to auxiliary wiring through the organic layer outside of the light emitting region (see Fig. 10, the portion of layer 111 that is connected to item 103 is what the examiner interprets as auxiliary wiring connecting the upper electrode, 111). The auxiliary wiring through the organic layer outside of the light-emitting region allows the upper electrode to be electrically connected to a thin film transistor.

Therefore, it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to modify the organic electroluminescent display of Yamazaki et al. to include having end portions of the organic layer partly overlapping on each other between the adjacent pixels, as taught by Sakaguchi et al., to keep the end portions of the organic electroluminescent layer from being exposed, and to upper electrode covers the organic layer and is connected to the auxiliary wiring through the connection holes between the organic layer, as taught by Shibata et al., for the added benefit of having the upper electrode connected to a thin film transistor outside of the light emitting region.

10. Claims 4, 5, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki (U.S. 2002/0030440 A1) in view of Sakaguchi et al. (U.S. 6,366,016 B1) and in further view of Shibata et al. (U.S. 6,147,451) and Tsuno et al. (U.S. 6,195,034 B1).

11. As to claims 4 and 5, Yamazaki, Sakaguchi et al. and Shibata et al. disclose a display apparatus as set forth in claim 3. Yamazaki, Sakaguchi et al. and Shibata et al. fail to disclose

that the lower electrodes have a three-layer structure including a reflective metallic material layer sandwiched between conductive oxide material layers.

Tsuno et al. disclose that an electrode that has a three-layer structure including a reflective metallic material layer sandwiched between conductive oxide material layers (column 11, lines 56-67; column 12, lines 1-7). This three-layered structure absorbs radio waves and is also transparent (column 1, lines 4-7).

Therefore, it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to modify the organic electroluminescent display of Yamazaki et al. to include that the lower electrodes have a three-layer structure including a reflective metallic material layer sandwiched between conductive oxide material layers, as taught by Tsuno et al., for the added benefit that the lower electrode will absorb radio waves and will be light transmissive.

12. As to claim 7, Yamazaki, Sakaguchi et al., Shibata et al. and Tsuno et al. disclose a display apparatus as set forth in claim 4. Yamazaki further discloses that the lower electrodes are formed of a light-reflective material (paragraph 0114, aluminum is a light reflective material). Using a light reflective material for the lower electrode will direct more light towards the viewer, thereby improving picture brightness.

Response to Arguments

13. The examiner acknowledges amendments to claims 1 and 3.

14. The examiner cites Yamazaki et al. (U.S. 2002/0030440) to reject independent claim 1. In figure 6D, the drain wirings 527 and 528 are considered auxiliary wiring by the examiner.

These wirings are at each pixel, although only one pixel is shown in figure 6D. Because there are a plurality of pixels in a display device, there will be these drain auxiliary wirings between each of the pixel electrode, or lower electrodes. The examiner still considers item 715 in Figure. 8B as an auxiliary wiring as well.

15. The dependent claims stand rejected in light of the rejection of the independent claim.

Final Rejection

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Prior Art

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Igarashi et al. (U.S. 4,792,723) teaches an electroluminescent panel with a three layered electrode structure that reflects light.

Contact Information

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony J. Canning whose telephone number is (571)-272-2486. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh D. Patel can be reached on (571)-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Anthony Canning

28 December 2005

ASHOK PATEL
PRIMARY EXAMINER